



11 Publication number : **0 571 156 A3**

12 **EUROPEAN PATENT APPLICATION**

21 Application number : **93303780.6**

51 Int. Cl.<sup>5</sup> : **H01R 9/07, H01R 13/28,  
H01R 4/24**

22 Date of filing : **17.05.93**

30 Priority : **19.05.92 GB 9210619**  
**15.06.92 GB 9212653**  
**20.07.92 GB 9215364**

43 Date of publication of application :  
**24.11.93 Bulletin 93/47**

84 Designated Contracting States :  
**DE FR GB IT NL**

88 Date of deferred publication of search report :  
**07.06.95 Bulletin 95/23**

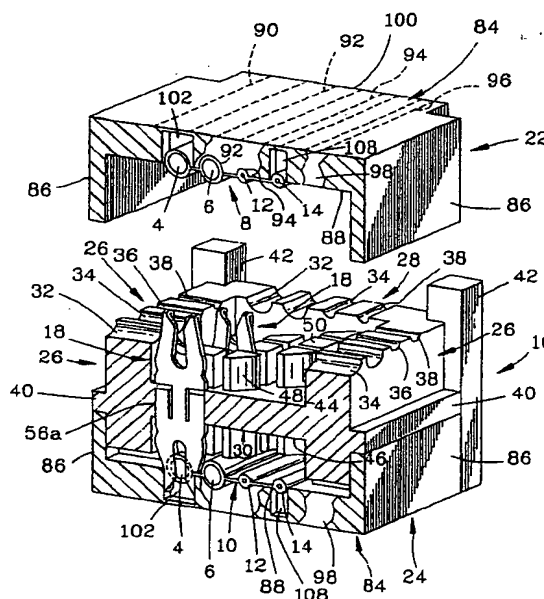
71 Applicant : **THE WHITAKER CORPORATION**  
**4550 New Linden Hill Road,**  
**Suite 450**  
**Wilmington, Delaware 19808 (US)**

72 Inventor : **Soes, Lucas**  
**Lijsterbeslaan 36**  
**NL-5248 BB Rosmalen (NL)**  
 Inventor : **Vugts, Franciscus Gerardus**  
**Seriwangstraat 11**  
**NL-5262 ZS Vught (NL)**

74 Representative : **Warren, Keith Stanley et al**  
**BARON & WARREN**  
**18 South End**  
**Kensington**  
**London W8 5BU (GB)**

54 **Electrical connector housing assembly and an electrical terminal therefor.**

57 An electrical connector housing assembly consists of an insulating housing (16) and a pair of insulating covers (22,24). The housing has a row of cavities (56) extending diagonally across a central wall (30) of the housing (16), each for receiving an electrical terminal (18) having slotted plate portions (58,60) with wire receiving slots opening in opposite directions and being located on opposite surfaces (44,46) of the central wall (30). Each cover (22,24) has a row of notches (102,104,106,108) extending across a base wall (84) of the cover, for receiving the end portion of a respective one of the slotted plate portions (58,60). According to a first mode of use, the slotted plates of each terminal are coplanar with each other and the covers (22,24) are mated with the housing (16) to drive the wires of flat flexible cables, (8,10) into the wire receiving slots of the terminals with the two cables (8,10) extending parallel to each other. According to a second mode of use, the slotted plates (58,60) of each terminal, are twisted about a neck (72) of the terminal so that the slotted plates (58,60) thereof extend at right angles to each other. For this mode of use, one (22) of the covers (22,24) is mated with the housing (16) in a second angular orientation which is orthogonal with respect to the first angular orientation, the cables (8,10) extending at right angles to each other, according to the second mode.



Hq. 2

EP 0 571 156 A3

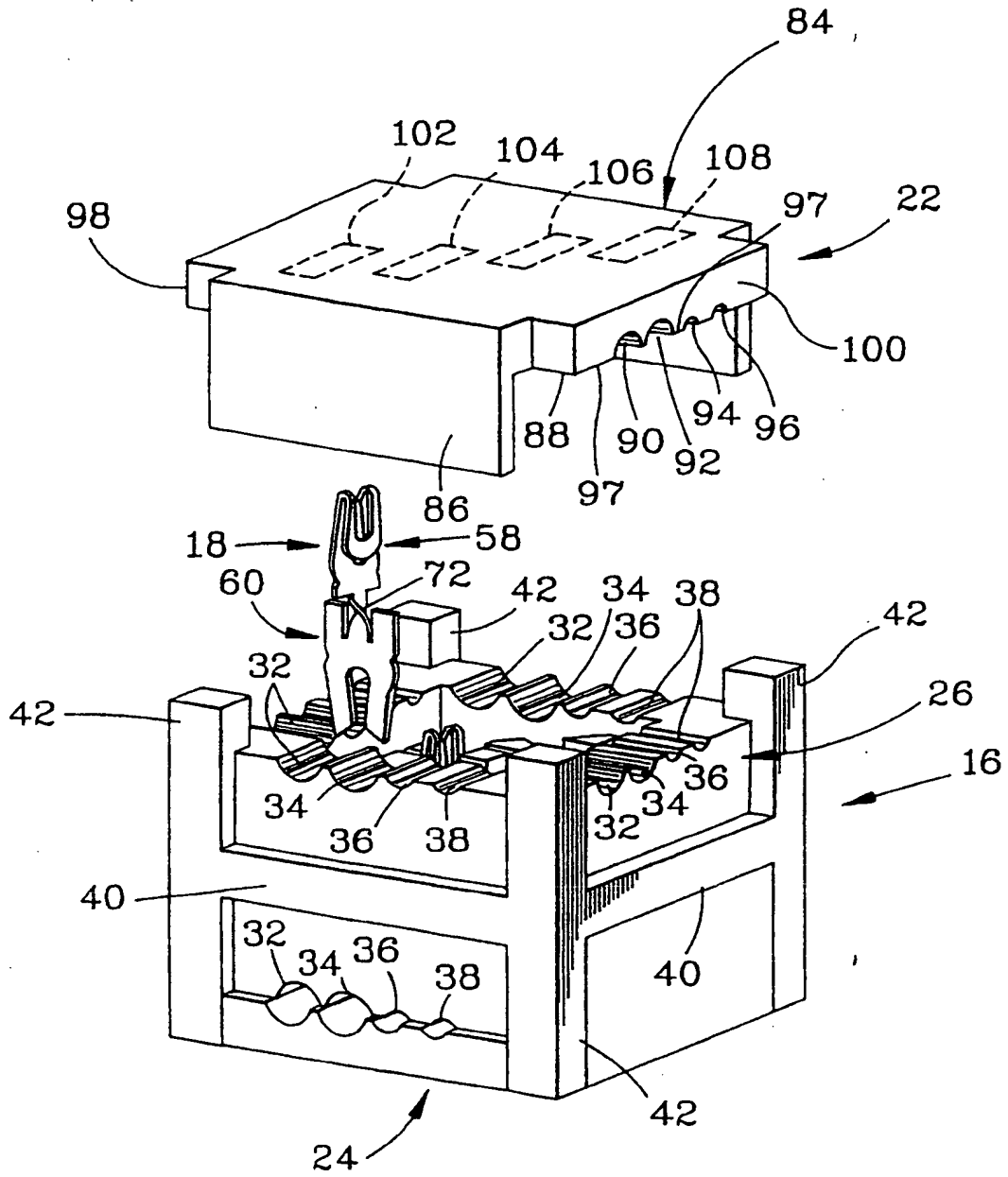


Fig. 7



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 93 30 3780

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	DE-A-27 39 210 (AMP INC.) * page 5, last paragraph - page 9; figures 1-5 *	1,2,10,13	H01R9/07 H01R13/28 H01R4/24
A	EP-A-0 478 400 (LABINAL SOCIÉTÉ ANONYME) * column 2, line 42 - column 5, line 47; figures 1-9 *	1,2,6,13	
A	EP-A-0 150 593 (AMP INCORPORATED) * page 18, line 9 - page 19, line 15; figures 2,10,11,12 *	1,2	
D,A	EP-A-0 382 482 (MOLEX INCORPORATED) * column 4, line 45 - column 9, line 50; figures 1-14 *	1,2,13	
A	DE-A-37 22 187 (BTR BLUMBERGER TELEFON UND RELAISBAU ALBERT METZ) * column 3, line 55 - column 6; figures 1-13 *	1,2	
X	FR-A-2 600 825 (MARS ACTEL SOCIÉTÉ ANONYME) * page 1 - page 5; figures 1-7 *	14-16	TECHNICAL FIELDS SEARCHED (Int.Cl.5) H01R
A		19,24	
X	EP-A-0 312 846 (SIEMENS AKTIENGESSELLSCHAT) * page 2, column 2, line 13 - page 3, column 3, line 22; figures 1-3 *	1	
A	FR-A-2 269 805 (RIST'S WIRES & CABLES LIMITED) * page 2, line 32 - page 3, line 5; figure 6 *	17-19	
A	GB-A-709 874 (THOMAS & BETTS CO.) * page 2, column 2, line 91 - page 6, column 1, line 46; figures 1-11 *	19,24,25	
	-/--		
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>10 April 1995</b>	Examiner <b>Tappeiner, R</b>
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1501 03.92 (PM/CO)



European Patent  
Office

### CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid,  
namely claims:
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

### LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions,  
namely:

see sheet -B-

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respects of which search fees have been paid,  
namely claims:
- ☐ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.  
namely claims:



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number  
EP 93 30 3780

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
A	GB-A-1 226 935 (AMP INCORPORATED) * page 1, line 2, paragraph 83 - page 3, column 1, line 25; figures 1-3 *	19,20,25	
A	FR-A-1 356 759 (WILHELM HARTIG WERK FÜR ELEKTROTECHNIK UND MECHANIK) * page 3, column 1, line 2 - page 4, column 1, paragraph 2; figures 1-7 *	19,24	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
The present search report has been drawn up for all claims			
Place of search <b>THE HAGUE</b>		Date of completion of the search <b>10 April 1995</b>	Examiner <b>Tappeiner, R</b>
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 (1.12.92) (P04C01)



European Patent  
Office

EP 93 30 3780 -B-

**LACK OF UNITY OF INVENTION**

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims 1-13 : Connector
2. Claims 14-18: One piece insulation displacement terminals
3. Claims 19-25: Hermaphrodite terminals